C.A.R.E. White Paper: Cost Allocation Rule Sets

Description of Purpose & Functionality

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Overview

This document outlines US Bank's approach to creating, maintaining, and using accounting codes within the Customer Automation and Reporting Environment (C.A.R.E.) application.

The definition of any accounting code housed in C.A.R.E. is based on a concept called a "cost allocation rule set." Rule set functionality delivers two primary benefits to the user: First, it provides a common platform on which to define accounting code structures consistent with their general ledger system. Second, it provides options to control the values and/or procedures that may be used during the transaction reallocation process (allocating a transaction to one of more accounting codes).

Creating & Maintaining Cost Allocation Rule Sets

Every cost allocation rule set is made up of one to many segments. Each segment is defined by the user (the actor creating the rule set) with the following four fields:

- **Segment Name**–The name (unique within the cost allocation rule set) associated to the segment. This is different from the cost allocation rule set name.
- **Segment Length**–The length of the segment within the accounting code structure. The sum of the lengths of all the segments is the length of the accounting code.
- **Required**–Used for validation to determine whether a value must be entered for that segment when setting up a default or alternate accounting code.
- **Validate from L**ist–Used for validation to determine whether a value entered for a segment when setting up a default or alternate accounting code must be validated against a list of "valid values" specific to that segment.

Current functional requirements specify the need for the concepts of a "parent cost allocation rule set" and a "child cost allocation rule set." All cost allocation rule sets are defined as one of these two types.

Creating a Parent Cost Allocation Rule Set

A parent cost allocation rule set defines the structure, validation rules, and master list of valid values associated for each segment with the structure. A parent can only be attached within C.A.R.E.'s access hierarchy at either the client's relationship node or a organization node within the relationship.

When creating a parent cost allocation rule set the user defines a rule set name (which must be unique to the relationship) and specifies the hierarchy node to which the rule set will be attached. The user then selects from the product types available for the relationship where the rule set is being attached.

Next, the user begins the process of building the rule set by defining the segments which make up the rule set. For each segment, the user defines the name and a length of the segment, whether or not a value is required for the segment, and whether the values entered for the segment (when setting up or maintaining an accounting code) must be validated against a list of valid values. These steps will then need to be repeated for each segment that makes up the rule set.

Once the structure (name, length, and validation rules for each segment) is defined C.A.R.E. will not allow the user to actually create the rule set unless each segment that has been set to validate against a list has at least a single value defined. It is important to note that for any segment where both the *Required* and *Validated from List* are set to "Yes" a value of spaces is not allowed.

Table 1 outlines the combination of values between the two validation fields (*Required* and *Validate from List)*, and shows how each affects the creation of the parent cost allocation rule set.

REQUIRED?	VALIDATE FROM LIST?	EFFECT ON THE ENTRY OF VALID VALUES
Y	Y	User must specify at least one valid value. A value of spaces is not allowed.
Y	N	User is not required to enter valid values. However, if a list is specified, a value spaces is not allowed.
N	N	User is not required to enter valid values. If a list is specified, a value of spaces is allowed.
N	Y	User must specify at least one valid value. A value of spaces is allowed.

Table 1 – How validation rules affect the need for valid values

Maintaining a Parent Cost Allocation Rule Set

A few rules to remember when maintaining a rule set:

- New segments may be added on to the end of the accounting code structure up until such time as the rule set is associated to a dependent. A dependent in this case is defined as an alternate accounting code, a child rule set, or a managing account.
- The Required and Validate from List options for a segment may be modified only up until such time as the rule set is associated to a dependent. A dependent in this case is also defined as an alternate accounting code, a child rule set, or a managing account.
- Previously saved segments may not be removed from the structure, regardless of whether the rule set is associated to a dependent or not.

Creating a Child Cost Allocation Rule Set

A child cost allocation rule set is used to provide a subset of values for one or more segments in a parent cost allocation rule set. A child can also be used to create a list of values for a segment where the user did not want to create a list at the parent level (e.g. parent *Validate from List* is No, and child *Validate from List* is Yes). In addition, a child may provide additional controls that could not be defined at the parent level.

The actual structure of a child rule set is inherited from the parent to which the child is associated. In other words, the number and length of segments at the child level will always match the parent. However, a child can modify both the validation rules and the list of valid values associated to each segment within the structure.

When setting up a child rule set, the user provides a name for the child and determines where to attach the rule set within C.A.R.E.'s access hierarchy (a child can be associated to either a relationship node or a hierarchy node). The child is then associated to its parent by selecting a parent which is at or above the access hierarchy where the child

resides, regardless of whether the user was attached at a level lower than the relationship. At this point, the user can modify the validation controls for the child based on the rules identified in **Table 2**.

VALIDATION FIELD	IF THE VALUE AT THE PARENT LEVEL IS …	THEN THE VALUE AT THE CHILD LEVEL CAN BE …
Required?	Y	Y
	N	Y or N
Validate From List?	Y	Y
	N	Y or N

Table 2 – How validation rules affect building a child cost allocation rule set

As can be seen from **Table 2** a segment for a parent may not have a list of values while the child could. However, if a segment for a parent requires a value, or requires validation from a list, the child would require the same controls. Simply stated, a child must always be subject to the same or greater constraints as defined at the parent level.

Validation rules for the child behave the same as the parent as indicated in **Table 1**.

Maintaining a Child Cost Allocation Rule Set

A couple rules to remember when maintaining the child cost allocation rule include:

- You may not add or remove segments from the structure.
- The only modifications that can occur for a child is modification of the validation rules (which are inherited from the parent). A child is always subject to the same or greater constraints as are defined at the parent level.

How Cost Allocation Rule Sets Affect Managing Accounts

When associating a managing account to a cost allocation rule set (either parent or child) the user sees all rule sets defined for the same product type, at or above the managing account up to the relationship node, regardless of whether the user was attached at a level lower than the relationship. If a child rule set exists for a parent rule set, the user may still attach the managing account to either the child or the parent.

Creating a Default Accounting Code

When setting up a managing account the user may be required to create a default accounting code. The setup of the default accounting code is controlled by the cost allocation rule set associated to the account. Because rule sets control the structure of the accounting codes, the managing account must be associated to a rule set before a default accounting code may be created.

The user creates a default accounting code by specifying a value for each segment defined within the structure of the rule set to which the managing account is associated. The segment validation controls are especially important here: if a validation rule specifies that the segment is required, then a value other than spaces is mandatory. Likewise, if the segment dictates validation from a list, then the value entered for the segment must exist in the list of values associated to the segment. See **Table 3** for validation rules.

REQUIRED?	VALIDATE FROM LIST?	WHEN CREATING A DEFAULT ACCOUNTING CODE …
Y	Y	A value is required for the segment. The value entered for the segment must exist on the list of valid values for the segment.
Y	N	A value is required for the segment. The value entered may exist on a list associated to the segment, but if the value does not exist on the list it is still accepted.
N	N	No value is required for the segment. If a value is entered, it may exist on a list associated to the segment, but if the value does not exist on the list it is still accepted.
N	Y	No value is required for the segment. However, if a value is entered it must exist on the list of valid values for the segment.

Table 3 – How validation rules affect the definition of a default accounting code

When setting up a cardholder account the default accounting code defaults from the managing account. The user can then change the default accounting code as needed to meet the cardholder's requirements. Any modification of the cardholder default accounting code must comply with the cost allocation rule set associated to the managing account.

Determining the Transaction Reallocation Method

The managing account determines if, and how, all cardholders under the managing account will reallocate their transactions. If reallocation is permitted all cardholders will reallocate transactions based on either pre-built alternate accounting codes or through the use of the cost allocation rule set associated to the managing account.

Reallocating based on alternate accounting codes is a way to limit cardholder access to certain segment values: it provides a pre-defined value or set of values (derived from the cost allocation rule set) for each segment and provides a mechanism to make sure the cardholder always reallocates to a valid accounting code. Reallocating based on the cost allocation rule set allows the cardholder more freedom in reallocating their purchases by not specifying a specific list of values (i.e. if the value is permitted under the rule set structure, then it is permitted for use in reallocation).

How Cost Allocation Rule Sets Affect Transaction Reallocation

The concept of the cost allocation rule set directly impacts transaction reallocation activities performed by the cardholder.

Alternate Accounting Codes

An alternate accounting code is an accounting code used for the reallocation of transactions (see the **Transaction Reallocation Process** section below) that is composed of a subset of values available at the rule set level.

Once a rule set has been established, the user will have the option of creating one or more alternate accounting codes. When maintaining the rule set the user will have the option of adding or removing associated alternate accounting codes.

Setting-up an Alternate Accounting Code

An alternate accounting code is defined in a manner similar to the default accounting code. To reduce the number of potential accounting codes, a user can set up multiple values for a segment within one alternate accounting code. This allows the cardholder to define a valid accounting code as needed during reallocation.

As with the default accounting code, validation for the setup of an alternate accounting code is dictated by the validation controls associated to the rule set and are outlined in **Table 3**. For alternate accounting codes, however, there is one important difference: when performing a reallocation the user must select a value for each segment, and that value must come from the predefined list (originally created when the accounting code was established and attached to the rule set). This, in effect, means that both the "required" control and the "validate from list" control behave as if always set to "yes."

The **Table 4** specifies the rules pertaining to the association of valid values to an Alternate Accounting Code. A couple of important points should be noted:

- "Yes" for the Required control means that a value of spaces can not be defined as a valid value for that segment.
- "No" for Required indicates that a value of spaces can be defined as a valid value for that segment.

REQUIRED?	VALIDATE FROM LIST?	RULE FOR CREATING AN ALTERNATE ACCOUNTING CODE
Yes	Yes	Must select values (one or more)
Yes	No (list at Rule Set level)	Must select or create values (one or more)
Yes	No (no list at Rule Set level)	Must create values (one or more)
No	Yes	Must select values (one or more)
No	No (list at Rule Set level)	May select or create values (empty is okay)
No	No (no list)	May create values (empty is okay)

Table 4 – How validation rules affect the creation of an alternate accounting code

Assigning Alternate Accounting Codes

When associating a managing account to a rule set, the "pool" of alternate accounting codes attached to the rule set becomes available to the managing account. From this pool, the managing account is then assigned specific alternate accounting codes to which all cardholder accounts under the managing account will have access.

If an alternate accounting code is removed at the managing account level, then it immediately becomes unavailable to all cardholder accounts attached to that managing account. An alternate accounting code can only be deleted from the rule set if that alternate accounting code is not currently in use by one or more managing accounts.

Managing Account Settings

The reallocation of transactions is controlled at the managing account level for all transactions associated to a cardholder account. The "reallocation method" (set at the managing account level) will determine the accounting codes to which the cardholder may reallocate transactions.

When setting up a managing account, the user will select one of the following three settings:

- **No reallocation**–Cardholder must use the default accounting code for all transactions.
- **Reallocation by rule set**–Cardholder may reallocate to any accounting code authorized by the rule set associated to the managing account.
- **Reallocation by alternate accounting code**–Cardholder may reallocate to any alternate accounting code associated to the managing account.

C.A.R.E. will not permit the user to specify reallocation by alternate accounting codes unless alternate accounting codes are associated to the managing account. Obviously, this cannot occur unless alternate accounting codes were first built at the rule set level. If no alternate accounting codes are associated to the managing account, the user, when setting up or maintaining the managing account, will be able to set whether the cardholder can reallocate using either the cost allocation rule set or be blocked from performing any reallocation (No Reallocation).

Transaction Reallocation Process

Both cost allocation rule sets and alternate accounting codes may contain multiple values per segment. Therefore, if reallocation is permitted the "mechanics" by which the cardholder will reallocate transactions are the same regardless of the selected method of reallocation. If the rule set is being used, then the cardholder must specify a single value for each of the segments that contain multiple values. Of course, the specification must comply with the validation rule described in the tables above.

If alternate accounting codes are used, the cardholder must select which alternate accounting code to use and specify a single value for each (if any) of the segments that contain multiple values. **Table 5** specifies the rules pertaining to selecting valid values while performing reallocation with an Alternate Accounting Code.

REQUIRED?	VALIDATE FROM LIST?	RULE FOR PERFORMING REALLOCATION WITH AN ALTERNATE ACCOUNTING CODE
Yes	Yes	Must select a value from list
Yes	No (list at AAC level)	Must select a value from list
Yes	No (no list at AAC level)	N/A (Would never occur as a list must exist at AAC level.)
No	Yes	Must select a value from list
No	No (list at AAC level)	Must select a value from list
No	No (no list)	N/A (Would never occur as a list must exist at AAC level.)

Table 5 – How validation rules affect the use of an alternate accounting code during reallocation